ASPECTS OF DIAGNOSIS*

The early diagnosis of carcinoma of the mouth

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Summary

A survey of all known cases of carcinoma of the mouth in a population of half a million shows that late diagnosis in the majority of cases is inevitable. With this neoplasm symptoms are minimal during the early stages and there is no correlation between the duration of symptoms and the stage of the tumour when first diagnosed. There was no evidence of undue delay by the patient or the medical (or dental) practitioner or by the hospital. Consequently an improvement in results in this disease can only be achieved by more effective treatment of the advanced lesion.

Introduction

With the exception of the early (Stage-I) lesion mouth cancer has a poor prognosis. The need to diagnose the disease early has been repeatedly urged for nearly a century, by Butlin *(1)* in 1885, again by Trotter *(2)*, and more recently by Cade *(3)*. In 1972 a survey of oral cancer by Binnie *et al. (4)* again stressed this need for early diagnosis and at the same time raised the possibility that the advanced stage of the tumour at the time of treatment might well be a characteristic of the natural behaviour of the disease.

A survey of the records of all known cases of carcinoma of the mouth in a population of half a million has been made with the aim of establishing (*a*) whether there was undue delay in diagnosis, treatment, or both, (*b*) what factors were associated with early diagnosis, and (*c*) to what likely extent a vigorous cancer education programme might have secured a higher proportion of patients found with early lesions.

Material and methods

During the 15-year period 1962–76 there were 223 known cases of carcinoma of the mouth in a population of 449 430 living in a defined area of Hull and East Yorkshire. The records of 2 patients could not be traced and these patients are disregarded. The methods of identifying all known cases have been previously described *(5)*. The mouth is defined as the oral cavity and oropharynx according to the UICC *(6)* and staging is also by this method. The sites within the mouth are those of the International Classification of Diseases *(7)*. For the purposes of this survey an early diagnosis is equivalent to finding a Stage-I growth — that is, a primary tumour 2 cm or less in its greatest dimension.

Findings

EARLY DIAGNOSIS ACHIEVED

During the period 1962–76 only 49 (22%) of the patients were diagnosed at an early stage (Table I).

TABLE I *Tumour site and early diagnosis*

Site	Total	Early Diagnosis (Stage I)	Stage II	Stage III	Stage IV
Tongue (ICD 141) (less 14 cases posterior third of tongue)	75	23 (30%)	22	26	4
Gum (ICD 143)	31	6 (19%)	9	4	12
Floor of mouth (ICD 144)	35	6 (17%)	13	11	5
Other parts of mouth (ICD 145)	24	9 (37%)	7	3	5
Oropharynx (ICD 146) (Including 14 cases of posterior third of tongue)	56	5 (9%)	6	28	17
Totals	221	49 (22%)	57	72	43

PATIENT DELAY

Nearly half of the patients (48%) with a known history postponed seeing a doctor or dentist for 3 months or more (Table II). In most cases

TABLE II *Duration of symptoms and early diagnosis*

Duration of Symptoms	Totals	Early Diagnosis (Stage I)	Stage II	Stage III	Stage IV
Less than 1 month	21	3 (16%)	4	10	4
1 - 2 months	66	16 (24%)	15	21	14
3 - 4 months	58	11 (19%)	19	17	11
More than 5 months	21	6 (29%)	7	4	4
No information	55	13	12	20	10
Totals	221	49	57	72	43

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TABLE III *Nature of symptoms and early diagnosis*

Symptom	Totals	Early Diagnosis (Stage I)	Stages II, III and IV combined
Minor Symptoms 157 (76%)			
Ulcer in mouth	61	11 (18%)	50
Soreness of mouth	44	10 (23%)	34
Lump in mouth	28	9 (32%)	19
Lump in neck	19		19
Bleeding in mouth	3		3
Ill-fitting denture	2		2
Painful Symptoms 36 (17%)			
Pain in mouth	28	10 (36%)	18
Pain in ear	5	1	4
Pain on swallowing	3		3
Urgent Symptoms 14 (7%)			
Difficulty in swallowing	9		9
Difficulty in speaking	2		2
Difficulty in opening mouth	2		2
Regurgitation through nose	1		1
No information	14	8	6
Totals	221	49	172

(76%) the main symptom was of a relatively trivial nature (Table III), but when the presenting complaint was a painless lump in the neck the patient sought advice rather earlier and usually within 8 weeks.

REFERRAL DELAY

Medical practitioners referred 85% of the patients and dental practitioners 9% (Table IV). In the 146 referral letters available the diagnosis was almost always stated or clearly implied. The urgent nature of the disease was recognised and nearly a quarter of the patients had domiciliary consultations arranged for them. There was no evidence from the letters of a preliminary trial of treatment or of observation before a second opinion was sought.

TABLE IV *Referral and early diagnosis*

Source of Referral	Total	Early Diagnosis (Stage I)	Stage II	Stage III	Stage IV
General Medical practitioner	189 (85%)	42 (22%)	52	59	36
Dental Surgeon	19 (9%)	4 (21%)	4	8	3
Hospital (incidental finding after admission)	13 (6%)	3 (23%)	1	5	4
Totals	221	49	57	72	43

HOSPITAL DELAY

The large majority of patients (86%) were seen in hospital within a fortnight of the date of the referral letter and with 75% of cases treatment started within the following 3 weeks. There was some delay with 40 patients (22% of those treated) and noteworthy delay of longer than 8 weeks with 7 patients (4%). This was the cumulative effect of short delays, each of about a fortnight, in admission for investigation, awaiting the results of the tests, referral to another department, and starting treatment.

FACTORS ASSOCIATED WITH EARLY DIAGNOSIS

A significantly higher proportion of patients under the age of 55 years presented with Stage-I tumours (Table V). Tumours of the buccal

TABLE V *Age and early diagnosis*

Age Decade	Totals	Early Diagnosis (Stage I)	Stage II	Stage III	Stage IV
35 -	11	5 (45%)	3	2	1
45 -	16	7 (43%)	3	5	1
55 -	49	10 (20%)	16	14	9
65 -	66	12 (18%)	14	23	17
75 -	62	11 (18%)	16	24	11
85 -	17	4 (23%)	5	4	4
Totals	221	49	57	72	43

mucosa (ICD 145) and also lesions of the anterior two-thirds of the tongue (ICD 141) were associated with early diagnosis (Table I). Pain was correlated with early diagnosis, but there were no other relationships between symptoms and early diagnosis (Table III). There was no connection between the duration of symptoms and the stage of the tumour (Table II). There was no difference in respect of early diagnosis between patients who consulted a general medical practitioner and those who first consulted a dental surgeon (Table IV).

CANCER EDUCATION AND EARLY DIAGNOSIS

As any delay was predominantly by the patient it can be argued that many might have responded to a vigorous cancer education programme. With 49 patients an early diagnosis was made (Table I) and a further 21 patients sought advice within 4 weeks of the onset of symptoms (Table II). There were 19 cases in which the presenting complaint was a painless lump in the neck, itself indicative of advanced disease (Table III). In 13 cases the diagnosis of malignant disease of the mouth was an incidental finding in hospital (Table IV). A cancer education programme would not have secured earlier diagnosis in any of these cases. Furthermore, 79 of the patients (36%) were

aged 75 years or more (Table V) and persons in this age group cannot be expected to respond to health propaganda. Only a small minority of about 40 patients (18%) would have been influenced by an educational programme directed at cancerous mouth lesions, a disease with an annual incidence of little more than 3 per 100 000.

Discussion and conclusion

Measures intended to secure earlier diagnosis are based on the assumption that the onset of cancer and the onset of symptoms more or less coincide so that the longer the duration of the symptoms, then the more advanced is the cancer. With carcinoma of the mouth there is no correlation between duration of symptoms and stage of the disease when diagnosed. Late diagnosis in many cases is therefore inevitable. It is a natural feature of the history of malignant growths of the mouth. The inescapable conclusion is that the poor prognosis of this disease can only be improved by more effective treatment of the advanced lesion. With the present proven methods of treatment this will require both organised training in head and neck surgery, as has been advocated by Shaw *(8)*, and more effective integration of treatment.

References

1 Butlin HT. Diseases of the tongue. London: Cassell, 1885:292.
2 Trotter W. The principles and technique of the operative treatment of malignant disease of the mouth and pharynx. Lancet 1913;1:1075–81.
3 Cade S. Malignant disease of the mouth. Ann R Coll Surg Engl 1949;4:381–91.
4 Binnie WH, Cawson RA, Hill GB, Soaper AE. Studies on medical and population subjects No 23. Oral cancer in England and Wales. London: HMSO, 1972:75.
5 Williams RG, Beetham KW. Cancer of the larynx in Hull and the surrrounding area of East Yorkshire. J Laryngol Otol 1976;90:639–53.
6 Union Internationale Contre le Cancer. TNM classification of malignant tumours. 3rd ed. Geneva: UICC, 1978:23–32.
7 World Health Organisation. Manual of the international statistical classification of diseases injuries and causes of death. 8th revision. Vol 1. Geneva: WHO, 1967:88–9.
8 Shaw HJ. Conservation and repair in cancer surgery of the head and neck. J R Soc Med 1980; 73:324–7.